December 2, 2022

Internal Revenue Service
CC:PA:LPD:PR (Notice 2022-58)
Room 5203
P.O. Box 7604
Ben Franklin Station
Washington, DC 20044

*Submitted electronically via Regulations.gov*

**RE: Internal Revenue Service Notice 2022-58, Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production**

The National Corn Growers Association (NCGA) appreciates the opportunity to provide comments for pending Department of the Treasury and Internal Revenue Service (IRS) guidance for new tax credits for clean fuel production enacted in the Inflation Reduction Act of 2022. Founded in 1957, NCGA represents nearly 40,000 dues-paying corn growers and the interests of more than 300,000 farmers who contribute through corn checkoff programs in their states. NCGA and its 50 affiliated state associations and checkoff organizations work together to sustainably feed and fuel a growing world by creating and increasing opportunities for corn growers.

As the primary producers of the feedstock for low-carbon ethanol, NCGA writes to provide our comments on guidance for the new § 45Z of the Internal Revenue Code, the Clean Fuel Production Credit. Our comments pertaining to sustainable aviation fuel (SAF) in § 45Z are also applicable to the Sustainable Aviation Fuel Credit in the new § 40B of the Internal Revenue Code and any Treasury or IRS guidance issued for the § 40B credit.

**RESPONSES TO NOTICE 2022-58 QUESTIONS**

**Establishment of Emissions Rate for Sustainable Aviation Fuel:** *What methodologies should the Treasury Department and IRS consider for the lifecycle greenhouse gas emissions of sustainable aviation fuel for the purposes of § 45Z(b)(1)(B)(iii)(II)?*

NCGA strongly urges Treasury and the IRS to use the Department of Energy's Argonne National Laboratory Greenhouse gases, Regulated Emissions, and Energy use in Transportation (GREET) model, without adjustments, to determine the lifecycle greenhouse gas (GHG) emissions of SAF for the purposes of § 45Z(b)(1)(B)(iii)(II) as well as § 40B.

GREET fully satisfies the criteria of § 211(o)(1)(H) of the Clean Air Act because it includes direct emissions and significant indirect emissions such as emissions from land use changes and includes all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel. GREET is a similar methodology to the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), the other methodology designated in the statute. Both GREET and CORSIA calculate the "wells-to-wheels" GHG emission of transportation fuels, including SAF, and assess both direct and indirect emissions.

GREET is the federal government's most robust and updated model or methodology for transportation lifecycle assessment. Because GREET will also be used to determine lifecycle GHG emissions for non-aviation fuels in the Clean Fuel Production Tax Credit, designating GREET as the "similar methodology" for lifecycle GHG emissions of SAF in both § 45Z and § 40B will bring much-needed consistency in assessing carbon emission reductions for all clean fuels and streamline IRS guidance and administration. These clean fuels, including SAF, will use many of the same feedstocks and will be produced by many of the same facilities.

GREET is used globally to measure life cycle greenhouse gas emissions from transportation, and DOE has the best resources, expertise, and current ability within federal government agencies to assess lifecycle emissions accurately and scientifically. Other than DOE/Argonne, no other federal agency maintains an annually updated lifecycle analysis (LCA) model or methodology for biofuels. For example, the Environmental Protection Agency (EPA) completed its most recent lifecycle assessment for biofuels in 2009 and has not updated it since.

**SAF Feedstocks**

Because biomass feedstocks, including feedstocks from agriculture, and biofuels are essential SAF sources, it is imperative that this new tax credit properly account for the lifecycle carbon emissions of these sources and the petroleum products these new fuels will replace. Sustainable biomass use, with a proper, scientifically driven LCA, is essential to produce SAF here in America for domestic and international consumption. As new fuel production technologies for SAF are developed and scaled to market, including ethanol-to-jet (ETJ) production, a regularly updated LCA is key to the ability of the tax credit to incentivize new fuels and continued carbon reductions and the success of both the SAF and clean fuels tax credits.

We support the Treasury and the IRS designating GREET as the domestic LCA option for the statute's "similar methodology" to CORSIA to ensure a robust, transparent, accurate and updated LCA methodology for biofuels and agriculture feedstocks in SAF production. The science and data within CORSIA's model are severely outdated and fail to accurately account for on-farm carbon reduction activities and feedstock yield increases, substantially overestimating the impact of land use change (LUC).

GREET assesses LUC emissions for corn ethanol, a feedstock for ETJ, at 7.4 gCO2e/MJ, whereas CORSIA assesses LUC with a value of 25.1 gCO2e/MJ. CORSIA's value is more in line with LCA estimates made more than 10 years ago that relied on predictive models, which underestimated crop yield increases and overestimated land extensification, as opposed to updated methodologies such as GREET that rely on actual feedstock and biofuel production experience. Researchers from Harvard, MIT and Tufts Universities assessed the state of the science for evaluation of ethanol carbon intensity in 2021, finding that the range of LUC emissions from today's feedstocks and fuels is between -1.0 and 8.7 gCO2e/MJ, well in line with GREET's assessment.[1]

Reliance on CORSIA alone for lifecycle assessment of SAF for the purposes of § 45Z and § 40B will undermine the capability of these credits to incentivize SAF production. It will also result in overreliance on non-U.S. standards for U.S. tax policy tied to an international organization rather than the federal government's own expertise found within DOE. Feedstock yield increases and improved agriculture production practices are well-recognized in the United States and accurately assessed through GREET, further solidifying GREET as the methodology Treasury and the IRS should designate for SAF for the purpose of both § 45Z(b)(1)(B)(iii)(II) and § 40B.

[1] Scully, Melissa J., et al, "Carbon intensity of corn ethanol in the United States: state of the science," (2021) Environmental Research Letters 16 043001. https://iopscience.iop.org/article/10.1088/1748-9326/abde08

In addition to other new U.S. Department of Agriculture (USDA) climate-smart agriculture initiatives, the Inflation Reduction Act includes $20 billion to support USDA conservation programs that provide climate-related benefits, offering farmers assistance with expanding practices that reduce GHG emissions and increase soil carbon storage. These production practice improvements will further reduce the carbon intensity (CI) of SAF and other clean fuels with lower-carbon feedstocks, but these and other CI reductions will not be properly accounted for without an updated and dynamic LCA, shortchanging SAF innovation, new production and emission reductions. The climate programs and tax credits of the Inflation Reduction Act must work together to support clean energy innovation, reduce emissions, improve energy security, and grow rural economies. Implementing these complementary programs and incentives with that mindset will maximize the benefits.

Last year, the White House convened a group of more than 150 stakeholders to announce the goal of reducing aviation emissions 20 percent by 2030. Notably, USDA Secretary Tom Vilsack said, *"USDA and American agriculture will make sustainable aviation possible in concert with our federal and industry partners and their stakeholders."* To meet the federal government's commitment and grow agriculture's clean energy contribution through SAF, guidance from Treasury and the IRS must designate GREET as the "similar methodology" for determining SAF lifecycle GHG emissions for both § 45Z and § 40B.

**OTHER TOPICS RELATED TO § 45Z CREDIT THAT REQUIRE GUIDANCE**

Section 45Z, if properly structured and implemented, will foster innovation in clean energy technologies and incentivize needed carbon reductions in transportation. A performance-based standard like the Clean Energy Production Tax Credit requires accurate measurement of lifecycle carbon emissions within a LCA methodology that accounts for factors that improve lifecycle carbon performance. Congress intended the § 45Z credit to reflect the best available science for lifecycle analysis. That is why Congress designated GREET as the LCA methodology for the credit, taking advantage of the latest research and analysis from the Department of Energy's Argonne National Lab and its data-driven annual update process that ensures GREET captures and reflects innovation and new technologies.

**Section 45Z Emission Rates and Emissions Table**

To drive greater GHG reductions, Treasury and the IRS must develop guidance that allows clean fuel producers to lower the emissions rates for their fuels based on the GHG-reduction strategies they and feedstock producers deploy. Because qualifying fuels must become increasingly cleaner to continue to qualify for the credit, the emissions rates and the emissions table the IRS develops must reflect and include the technologies and practices that biofuel and feedstock producers use to reduce the carbon intensity of fuel. This tax credit is designed to spur material changes to fuel and feedstock production practices that lower GHG emissions; therefore, the emissions table must include these distinctions through a range of biofuel types and categories based on their impact on a fuel's emissions rate.

Fortunately, the emissions reductions associated with these biofuel production processes and agriculture production practices are readily identifiable using GREET, the LCA tool the statute requires for § 45Z. Treasury and IRS guidance should specify use of the most recent version of GREET from Argonne, without modifications, for quantifying clean fuel emissions reductions. Biofuel production processes and agriculture production practice changes that have the greatest impacts on corn ethanol CI and should be reflected in the IRS emissions table include, but are not limited to, the following:

**Biofuel production processes:** Carbon capture and sequestration, renewable electricity, renewable natural gas and treatment of distillers grains.

**On-farm production practices:** Cover crops, no-till and reduced tillage and fertilizer management.

GREET includes two important tools, Argonne's Carbon Calculator for Land Use and Land Management Change from Biofuels Production (CCLUB) and Argonne's Feedstock Carbon Intensity Calculator (FD-CIC) that support better evaluation of feedstock CI.[2] [3] Argonne developed CCLUB as an integral feature within GREET to analyze GHG emissions from land use change and land management change in the context of biofuel LCA, enabling GREET to assess CI from agriculture land management changes that impact soil organic carbon and nitrous oxide emissions. The U.S. Department of Energy's Advanced Research Projects Agency–Energy (ARPA-E) supported Argonne in examining CI variations of different farming practices to grow agricultural crops for biofuel production and further develop the FD-CIC. The FD-CIC tool enables calculation of both national-level reference CI of feedstocks and farm-level CI.

Argonne's recent analysis of GHG emissions reductions in corn ethanol between 2005 and 2019 shows a 15 percent reduction in GHG emission from corn production during that time. Furthermore, Argonne measured that the decline in GHG emissions from corn production contributed to the overall 23 percent decline in the CI of corn ethanol.[4] GREET, with its state-of-the art tools in CCLUB and FD-CIC, is capable of most accurately capturing updated crop yields and GHG emission reductions from farmers' improved production practices, and GREET has the capability to incorporate other ongoing, voluntary climate-smart improvements in agriculture production.

**Reducing Feedstock CI**

As the producers of the sustainable, primary feedstock for ethanol, corn farmers have demonstrated continuous improvements in farming practices and widespread adoption of production technologies that improve soil heath and reduce GHG emissions, supporting lower carbon intensity of biofuels. For example, according to USDA's Economic Research Service, farmers have increasingly moved to reduced tillage or no-till practices, away from conventional tillage, and are planting more cover crops. As of 2018, farmers operate 65 percent of planted corn acres as no-till or minimum-till.[5] These changes in tillage practices help the soil retain nutrients and water, as well as store more carbon in the soil. Additional USDA data demonstrate a 50 percent increase in land planted to cover crops nationally between 2012 to 2017, with increases of more than 100 percent in top corn producing states including Iowa and Illinois.[6]

In addition to the $20 billion for USDA conservation programs in the Inflation Reduction Act, federal investments, along with incentives from private carbon and ecosystems services markets, are poised to support significant ongoing carbon reductions from agriculture, supporting further reductions in biomass feedstock and biofuel CI. Most recently, USDA announced awards of $2.8 billion to 70 projects in the new Partnerships for

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[2] Carbon Calculator for Land Use and Land Management Change from Biofuels Production (CCLUB) manual, accessed at https://greet.es.anl.gov/publication-cclub-manual-r6-2020

[3] Feedstock Carbon Intensity Calculator (FD-CIC) tool, accessed at https://greet.es.anl.gov/tool_fd_cic

[4] Lee, Uisung & et al. ANL, "Retrospective Analysis of the U.S. Corn Ethanol Industry for 2005–2019: Implications for Greenhouse Gas Emission Reductions," (2021). https://onlinelibrary.wiley.com/doi/10.1002/bbb.2225

[5] U.S. Department of Agriculture, Economic Research Service, "Tillage Intensity and Conservation Cropping in the United States, September 2018; accessed at https://www.ers.usda.gov/webdocs/publications/90201/eib-197.pdf?v=7027.1

[6] U.S. Department of Agriculture, Economic Research Service, "Cover Crops Trends, Programs and Practices in the United States, February 2021; accessed at https://www.ers.usda.gov/webdocs/publications/100551/eib-222_summary.pdf?v=3793.4

Climate-Smart Commodities initiative.[7] USDA projects these investments will expand climate-smart agriculture practices on millions of acres of working lands and sequester more than 50 million metric tons of carbon dioxide equivalent over the life of the projects. As part of the collaborative Farmers for Soil Health, NCGA was pleased USDA selected our joint project to receive up to $95 million to support our goal of expanding land planted to cover crops to 30 million acres by 2030.

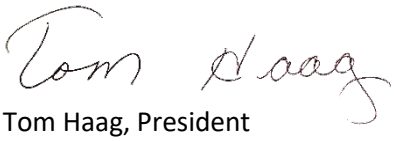
Corn farmers are proud of our leadership in expanding conservation and best management practices and are committed to further sustainability achievements. These improvements will continue to reduce the CI of ethanol, SAF and other clean fuels. Accounting for these improvements in the lifecycle analysis and emissions tables for the § 45Z credit, as well as the § 40B SAF credit, will ensure a tax credit that requires fuels to become increasingly cleaner accurately incentivizes low carbon progress and investments.

With pathways available to achieve significant GHG reductions in biofuels and other clean fuels, Treasury and IRS guidance must also allow clean fuel producers to receive additional credit for GHG emission reductions below zero, and § 45Z would allow negative emission rates.

**CONCLUSION**

NCGA appreciates Treasury and IRS consideration of our input as you implement these tax credits that will contribute to greater transportation decarbonization. We urge you to rely on the best science, consulting with DOE and USDA, as the basis for developing guidance for § 45Z and § 40B and ensuring an accurate and effective carbon performance standard that allows clean fuel producers to lower the GHG emission rates of their fuels. NCGA looks forward to working with Treasury and IRS on this guidance, including as a resource on sustainable, low-carbon feedstock production practices.

Sincerely,



Tom Haag, President
National Corn Growers Association

[7] USDA Partnerships for Climate-Smart Communities. https://www.usda.gov/climate-solutions/climate-smart-commodities